

REMARKS

This communication is being filed in response to the Office Action having a mailing date of April 20, 2004. With this communication, claims 1-20 are pending in the present application, with claims 1, 4, 9-12, and 16-19 being independent claims. No claims are currently amended herein.

In the Office Action, claims 1-20 were rejected under 35 U.S.C. § 112, first paragraph for failing to comply with the written description requirement. Claims 1-20 were rejected under 35 U.S.C. § 112, second paragraph, for being indefinite. Claims 1-15 and 19-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of the Ramsey article, Gupta (U.S. Patent No. 6,385,757), and the article by Russo. Claims 16-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ramsey in view of Gupta. For the reasons set forth below, the applicants respectfully disagree with these rejections, and request that the pending claims be allowed. Each rejection will be discussed in order below.

A. Rejection Under 35 U.S.C. § 112, First Paragraph

In the Office Action, claims 1-20 were rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement with regards to the claim recitation of a “representation of structure.” As stated by the Examiner on page 2 of the Office Action, the Examiner believes that the applicant has failed to provide convincing evidence that the applicant intended the architecture description language (ADL) of the invention to “generate a representation of structure.”

Initially, the applicant would like to point out that independent claims 16-18 do not contain the recitation of a “representation of structure.” Rather, these independent claims recite other subject matter that is distinctive over the cited art. Therefore, the rejection under 35 U.S.C. § 112, first paragraph with regards to claims 16-18 is improper and should be withdrawn.

To support the Examiner’s rejection of the other claims on the basis of 35 U.S.C. § 112, first paragraph, the Examiner has referred to certain sections of the applicant’s specification (*see, e.g.*, pages 2-3 of the Office Action). More specifically, the Examiner has

quoted sections of the applicant's specification where the ADLs ISDL and nML are mentioned, and has tried to limit the invention to only these implementations.

However, the applicant respectfully argues herein that such discussion in the specification is merely referring to example embodiments of the invention. These are by no means embodiments that limit the applicant's invention to solely ISDL and nML implementations. In particular, in addition to nML and ISDL, the Examiner has correctly noted that the applicant has described embodiments that could be implemented with the ADLs LISA and RADL, as discussed on page 3, lines 6-8 of the present application. Moreover, the section on page 9, lines 16-19 of the present application quoted by the Examiner also explicitly identifies LISA as a possible ADL that can be used by an embodiment of the invention. Moreover, Tables 1 and 2 on page 9 of the present application, as well as Table 4 on page 11 of the present application, depict use of RADL.

It is known that both LISA and RADL provide ADLs having structural representations. For example, section 2.3 on page 48 of Russo explicitly describes a LISA description as having structural content. The applicant has further attached along with this communication an article by Mishra et al., entitled "Architecture Description Language Driven Validation of Dynamic Behavior in Pipelined Processor Specification," published July 28, 2003. On page 6, second full paragraph of this article, a discussion is provided of languages that capture both the structure and behavior of a processor. LISA is described as one such ADL. RADL is described as an extension of the LISA approach (which provides structural representation) that enables generation of simulators. Therefore, it is clear that either or both LISA and RADL are both ADLs that describe/define/are a representation of structure. The applicants have clearly described these ADLs throughout the specification as possible embodiments of the invention.

Accordingly, the requirements of 35 U.S.C. § 112, first paragraph have been met by the written description provided by the applicant. As such, the rejection of the applicable claims under this section should be withdrawn.

B. Rejection Under 35 U.S.C. § 112, Second Paragraph

Claims 1-20 were rejected under 35 U.S.C. § 112, second paragraph for using the phrase “ADL representation generates a representation of a structure,” which the Examiner believed is indefinite. Again, the applicants respectfully remind the Examiner that claims 16-18 do not contain this recitation, and therefore, the rejection under 35 U.S.C. § 112, second paragraph should not be applicable to these claims and should be withdrawn.

With regards to the claims that include this recitation, the Examiner is correct that the specification supports the interpretation that the ADL defines a structural representation. A person skilled in the art having the benefit of the applicants’ disclosure would further clearly recognize this to be true. As such, the rejection under 35 U.S.C. § 112, second paragraph with regards to the applicable claims should be withdrawn.

C. Rejections Under 35 U.S.C. § 103 of Claims 1-15 and 19-20

On page 6 of the Office Action, the Examiner correctly stated that Ramsey and Gupta do not explicitly state that their ADL representation generates a representation of structure. Nevertheless, the Examiner has concluded that Ramsey and Russo can be combined to provide this feature and rejected claim 1 on this basis. To support his conclusion, the Examiner has cited page 520 (a portion of the first full paragraph) of Ramsey as allegedly describing a modification of SLED to provide features of nML. The Examiner has further cited pages 47-48, section 2, of Russo as demonstrating that it is possible to use different ADLs for different design purposes, including MIMOLA, which provides a structural representation. The Examiner also stated that it would have been obvious to a person of ordinary skill in the art to implement a system by Ramsey that includes SLED with other ADL features (such as a representation of a structure) as suggested by Russo. The applicant respectfully disagrees with this position/conclusion taken by the Examiner.

Firstly, page 520 (first full paragraph) of Ramsey specifically teaches away from using the substantive features of nML in SLED. For example, Ramsey states that SLED provides a more concise and less error-prone way of specifying binary representations than nML’s binary string-attributes. SLED further uses patterns instead of bit strings, in contrast to

nML. Finally, SLED specifications resemble architecture manuals, and nML specifications do not. Ramsey made these statements to provide a contrast between these two ADLs and to provide a clear description of the differences between SLED and nML, and to further highlight the advantages of SLED over nML. These are explicit teachings against making a combination of nML and SLED.

The section of this paragraph that the Examiner has cited, modifying SLED with features of nML, should not be taken to broadly cover the implementation of structural representations provided by nML into a SLED description. The discussion noted by the Examiner in the Ramsey article merely states that nML's ideas that can be added into SLED include the addition of nML's register-transfer sub-language to SLED and permitting users to attach arbitrary attributes to constructors and their operands. There is nothing disclosed, taught, or suggested in the Ramsey article that relates to adding the full structural representation capability of nML into SLED. These limited nML features noted by Ramsey cannot and should not be read so broadly as to include a complete modification of SLED so that it generates a representation of structure.

Further support for the fact that SLED does not include or cannot include structural representation can be found on the table provided on page 11 of the applicant's amendment that was filed on February 4, 2004. Clearly according to this table, SLED relates to a behavioral representation and does not include structural representation. SLED simply falls among the line of traditional ADL languages that are classified in either one of two categories, depending on whether they primarily capture the behavior or the structure of the processor. *See, e.g.*, page 5, first paragraph of section 2 of the Mishra article enclosed herewith. SLED is one of the traditional languages that capture only the behavioral representation. There are only a limited number of ADL languages that capture both the structure and the behavior of the processor, among which are LISA and RADL. *See, e.g.*, page 6, second full paragraph of the Mishra article.

Adding the Gupta reference to either Ramsey and/or Russo does not cure the deficiencies of these references. Gupta has been cited merely for a method of reading opcode tables using a description language. Gupta is completely silent with regard to the feature of an

ADL representation that provides a representation of a structure. Accordingly, claim 1 is allowable over the cited references under 35 U.S.C. § 103.

Independent claims 4, 9-12, and 19 all include the recitation of a “representation of structure.” As described above, the cited references do not disclose, teach, or suggest this feature read in combination with the other recitations of these claims. As such, these independent claims are allowable under 35 U.S.C. § 103 over the cited references as well.

D. 35 U.S.C. § 103 Rejection of Claims 16-18

Claims 16-18 were rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Ramsey and Gupta. More specifically, the Examiner has added the reference of Gupta to Ramsey to provide a citation for a computerized method of reading opcode tables to produce a description language. On page 20 of the Office Action, the Examiner admitted that Ramsey does not explicitly state that the SLED representation can be used as input to generate a “simulator tool.” However in making the rejection under 35 U.S.C. § 103, the Examiner has cited page 520, third line and page 520, first full paragraph of Ramsey to take the position that SLED can be modified with the features of nML to provide simulators. The applicants respectfully disagree with this position taken by the Examiner.

While it is true that an nML description can be used to build a simulator, there is nothing disclosed, taught, or suggested in the Ramsey article that this particular feature of nML can be placed into a SLED description to allow such a modified SLED to provide a simulator tool. As previously described above, the first full paragraph of Ramsey describes in great detail the differences between SLED and nML. Moreover, this paragraph on page 520 of Ramsey mentions that only a few features of NML might be capable of being added into SLED. These features include nML’s register-transfer sub-language and being able to permit users to attach arbitrary attributes to constructors and their operands. These two features of nML cannot be broadly read to include a specific capability to provide SLED with a simulator tool. There is no mention or suggestion of providing such a simulator capability to SLED provided by this paragraph, let alone a detailed and enabling description of how such a combination or modification may be performed.

Therefore, since neither Ramsey nor Gupta provide a discussion of a SLED description that can be used as input for a simulator tool, claim 16 is allowable under 35 U.S.C. § 103. Claims 17 and 18 are also allowable over the cited references because claim 17 recites that at least some of the code in ADL format is used as input to generate a simulator tool, and claim 18 recites that the encoded representation and ADL format is used to generate a simulator tool. These are distinctive features that are not found in the cited references. Accordingly, claims 17 and 18 are allowable as well.

E. Conclusion and Other Comments

On page 25 of the Office Action, the Examiner noted that the applicant, in the previous amendment of February 4, 2004, stated that the “Examiner indicated SLED is not an ADL.” The applicants agree with the Examiner that this statement in the previous amendment is untrue. The applicants made a typographical error in that amendment, and should have stated that the “Examiner stated that SLED is an architecture description language (ADL).” (Emphasis added). The applicant apologizes for this typographical error and for any confusion. The applicant was trying to make a point that while SLED is an ADL, SLED does not have the behavioral representation feature as recited in the applicable claims.

Overall, none of the references singly or in any motivated combination disclose, teach, or suggest what is recited in the independent claims. Thus, given the above amendments and accompanying remarks, the independent claims are now in condition for allowance. The dependent claims that depend directly or indirectly on these independent claims are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

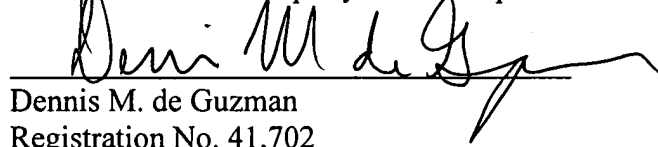
If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to the allowability of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 622-4900.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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